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GROUP 3700

To:

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Remarks:

Attached is a Brief on Appeal in triplicate

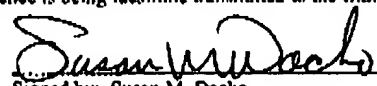
Patent
Case No.: 48317US030

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: JAPUNTICH, DANIEL A.
Application No.: 09/678580 Group Art Unit: 3761
Filed: October 3, 2000 Examiner: Aaron J. Lewis
Title: FIBROUS FILTRATION FACE MASK HAVING A NEW
UNIDIRECTIONAL FLUID VALVE

BRIEF ON APPEAL

Board of Patent Appeals
and Interferences
Commissioner for Patents
Washington, DC 20231

<u>CERTIFICATE OF TRANSMISSION</u>	
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I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on:	
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Date	Signed by: Susan M. Dacko

Dear Sir:

This Appeal Brief is submitted in accordance with the terms of 35 U.S.C. § 134 and 37 CFR § 1.192 in response to the final Office Action mailed January 2, 2002. Appellants furnish the Appeal Brief in triplicate. Please charge the processing fee of \$320.00 (37 CFR § 1.17(c)) to Deposit Account No. 13-3723.

REAL PARTY IN INTEREST

The real party in interest is 3M Company (formerly known as Minnesota Mining and Manufacturing Company) and its affiliate 3M Innovative Properties Company of St. Paul, Minnesota.

RELATED APPEALS AND INTERFERENCES

U.S. Patent application Serial No. 08/240,877 is presently being appealed. A Notice of Appeal was filed on April 3, 2002. The Appeal Brief has yet to be filed.

STATUS OF CLAIMS

Claims 33-58 and 60-67 have been rejected and are the subject of this appeal.

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STATUS OF AMENDMENTS

An Amendment was filed on March 4, 2002. This Amendment should be entered into the file because it raises no new issues and it does not require any further searching by the Examiner. In addition, prosecution has been reopened as a result of the interview that took place on April 5, 2002.¹

SUMMARY OF THE INVENTION

The present invention is directed to a filtering face mask 10 that employs an exhalation valve 14 to purge exhaled air from the mask interior. The exhalation valve 14 includes a valve seat 26, and a single flexible flap 24, and a valve cover 50. The single flexible flap 24 has a stationary portion 28 and one free portion and first and second opposing ends. The first end is associated with the stationary portion 28 so as to remain at rest during an exhalation, and the second end 38 is associated with the free portion so as to be lifted away from the seal surface 31 during an exhalation. The second end 38 also is disposed beneath the first end when the filtering face mask is worn on a person. The flexible flap is positioned on the valve seat such that it is pressed towards the seal surface 31 in an abutting relationship with it when a fluid is not passing through the orifice. The valve cover 50 is disposed over the valve seat 26 and comprises a surface 59 that mechanically holds the flexible flap against a flap-retaining surface 40 on the valve seat (page 6, line 25 to page 9, line 17 and page 14, line 33 to page 15, line 16).

Before the present invention, commercially available filtering face masks had commonly used button-style exhalation valves to purge exhaled air from the mask interior. An example of such a valve is shown in Figure 3 of the British patent GB 2,072,516A to Simpson et al. (Simpson). Appellants' invention differs from these known products by allowing only one portion of the flap to be lifted from the seal surface. In known button-style valves, the central mounting enables the whole circumferential edge to be free to be lifted from the seal surface. The central mounting, however, interferes with the flow of exhaled air through the valve and does not allow as great a moment arm to be achieved in lifting the flap from the seal surface.

In addition to the known button-style valves, which have been commercialized, a flapper-style valve has been previously described in Figure 2 of Simpson. Although Simpson describes a

¹ The claims in the Appendix include the changes made in the March 4, 2002, Amendment.

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flapper-style valve that is used on a filtering face mask, the valve possesses a number of deficiencies, amongst them, the inability to keep the flap closed under any orientation of the valve. To keep its valve closed under neutral conditions — that is, when a wearer is neither inhaling nor exhaling, Simpson places the valve on the top surface of a duck-billed mask. It does not describe how to construct a valve where the flap is pressed against the seal surface when a wearer is neither inhaling nor exhaling and it does not show a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flap against a flap retaining surface on the valve seat.

ISSUES ON APPEAL

Issue 1 - Double Patenting

The present invention requires a valve cover that is disposed over a valve seat and that comprises a surface that mechanically holds a flexible flap against a flap-retaining surface on the valve seat. This feature of the invention is not claimed in any of the copending applications that have been cited by the Examiner in making this rejection. Despite the fact that none of the other applications claim this feature, can a double patenting rejection be sustained?

Issue 2 - Obviousness

Claims 30-66, 50-56, 58-60 have been rejected under 35 USC § 103 as being unpatentable over UK Patent GB 2,072,516A to Simpson in view of French Patent 1,209,475. The Simpson patent describes a flapper-style valve that can be used on a filtering face mask, and the French patent describes a valve that has a sleeve-like membrane that would be used in a high-pressure annular canal through which a liquid flows. Would this combination of documents have rendered obvious a filtering face mask that uses a flapper-style exhalation valve, which has a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flexible flap against the flap-retaining surface?

GROUPING OF CLAIMS

The appealed claims will stand or fall together. No admission, however, is being made with respect to the obviousness of the subject matter of the dependent claims with respect to the subject matter of the independent claims.

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ARGUMENTS OF APPELLANTS

Issue 1 - Double Patenting

The filtering face mask of the present invention includes an exhalation valve that has a valve seat in a single flexible flap. The flexible has a stationary portion and one free portion. The one free portion is disposed beneath the stationary portion when the flexible flap is worn on a person. The exhalation valve also comprises a valve cover that is disposed over the valve seat and comprises a surface that mechanically holds the flexible flap against a flap-retaining surface on the valve seat.

As the Board is aware, a double patenting rejection can only be sustained if the applicant is claiming the same invention that is being claimed in another patent application or if the applicant is claiming an invention that would have been obvious in view of an invention that is being claimed in another patent or patent application. In making this double patenting rejection, the Examiner has not indicated whether the rejection is a double patenting rejection under 35 USC § 101 or whether it is a double patenting rejection that has been made under the judicially-created doctrine of obviousness type double patenting. Because none of the claims that are presented in this case are identical to the claims in any of applicants' copending applications or issued patents, a rejection under 35 USC § 101 cannot be sustained.² Thus, to the extent that a double patenting rejection has been made under 35 USC § 101, it must be reversed.

Turning to the judicially-created doctrine of obviousness-type double patenting, applicants respectfully submit that a double patenting rejection of this kind also cannot be sustained because no evidence has been presented, which shows that appellants' claimed invention is obvious over the invention claimed in any of appellants' issued patents or allowed patent applications. As the Board is aware, obviousness-type double patenting is a judge-made doctrine that prevents an extension of the patent right beyond the statutory time limit. This type of rejection is made when the claimed subject matter is not patentably distinct from the subject matter claimed in a commonly-owned patent.³ The purpose of the doctrine is to prevent an unjustified extension of the patent term by

² At the present, the Examiner has not identified any claims that are identical to the claims that are present in this patent application.

³ *In re Bratt*, 19 USPQ2d 1289, 1291-92 (Fed. Cir. 1991).

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allowing a second patent that claims an obviousness variant of the same invention.⁴ Generally, a "one-way" test has been applied to determine whether an obviousness-type double patenting rejection can be sustained. Under this test, the Examiner asks whether the application claims are obvious over the patent claims.⁵ If the application claims are patentably distinct from the claims in the patent, then the double patenting rejection is not proper and must be withdrawn. If, however, the application is not patentably distinct, then the applicant can file a Terminal Disclaimer to eliminate the issue with respect to double patenting.⁶

In the present application, the Examiner has yet to identify any claim in any of applicants' patents (or any allowed copending applications), which requires a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flexible flap against the flap-retaining surface. Because this feature is not also claimed in any of applicants' copending patent applications, the obviousness-type double patenting rejection cannot be sustained. Accordingly, upon reopening prosecution of this application, it will be incumbent upon the Examiner to identify where applicants are claiming an exhalation valve that has its flexible flap secured to a flap-retaining surface on a valve seat through use of a valve cover that has a surface that mechanically holds the flap against that flap-retaining surface. In the absence of putting this evidence into the record, the double patenting rejection must be withdrawn.

Issue 2 - Obviousness

At the interview that took place on April 5, 2002, the supervisory Primary Examiner John Weiss indicated that the French patent could not properly be combined with the Simpson reference. Examiner Lewis then indicated that the finality of the Office Action would be withdrawn and that prosecution would be reopened. Accordingly, the rejection based on Simpson and the French patent will not be sustained. Although the McKim patent has also been cited as a secondary reference, during the interview Examiner Weiss also indicated that the reed valve that is described in McKim should not qualify as being a flexible flap as defined in the present invention. Therefore, Examiner Lewis should also consider the propriety of maintaining any combination based on

⁴ *In re Goodman*, 29 USPQ2d 2010, 2015 (Fed. Cir. 1993).

⁵ *In re Berg*, 46 USPQ2d 1226, 1229 (Fed. Cir. 1998).

⁶ *In re Berg*, 46 USPQ2d at 1229.

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McKim. At the present, McKim has only been cited as a secondary reference against dependent claims. Therefore this application should be allowed over the art of record in this case in any event.

CONCLUSION

For the above reasons, appellants respectfully submit that the double patenting rejection cannot be sustained under either 35 USC § 101 or the judicially-created doctrine of obviousness-type double patenting. The prior art rejection already has been withdrawn.

Respectfully submitted,

May 6, 2002

Date

By: 

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APPENDIX

33. A filtering face mask that comprises:

- (a) a mask body that is adapted to fit over the nose and mouth of a wearer; and
- (b) an exhalation valve that is attached to the mask body, the exhalation valve

comprising:

(1) a valve seat that comprises:

- (i) a seal surface;
- (ii) an orifice that is circumscribed by the seal surface; and
- (iii) a flap-retaining surface; and

(2) a single flexible flap that has a stationary portion and only one free portion and first and second opposing ends, the first end of the single flexible flap being associated with the stationary portion of the flap so as to remain at rest during an exhalation, and the second end being associated with the free portion of the flexible flap so as to be lifted away from the seal surface during an exhalation, the second end also being located below the first end when the filtering face mask is worn on a person, the flexible flap being positioned on the valve seat such that the flap is pressed towards the seal surface in an abutting relationship therewith when a fluid is not passing through the orifice; and

(3) a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flexible flap against the flap-retaining surface.

34. The filtering face mask of claim 33, wherein the valve seat is made from a relatively light-weight plastic that is molded into an integral one-piece body.

35. The filtering face mask of claim 34, wherein the valve seat has been made by an injection molding technique.

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36. The filtering face mask of claim 33, wherein the seal surface is substantially uniformly smooth to insure that a good seal occurs between the single flexible flap and the seal surface, and wherein the flexible flap is made from a material that is capable of allowing the flap to display a bias towards the seal surface.

37. The filtering face mask of claim 33, wherein the flexible flap would normally assume a flat configuration when no forces are applied to it but has a curved profile when viewed from a side elevation.

38. The filtering face mask of claim 37, wherein the flexible flap is elastomeric and is resistant to permanent set and creep.

39. The filtering face mask of claim 37, wherein the flexible flap is made from an elastomeric rubber.

40. The filtering face mask of claim 33, wherein the flexible flap has a stress relaxation sufficient to keep the flexible flap in an abutting relationship to the seal surface under any static orientation for 24 hours at 70 °C.

41. The filtering face mask of claim 40, wherein the flexible flap provides a leak-free seal according to the standards set forth in 30 C.F.R. § 11.183-2, July 1, 1991.

42. The filtering face mask of claim 33, wherein the flexible flap is made from a crosslinked polyisoprene.

43. The filtering face mask of claim 33, wherein the flexible flap has a Shore A hardness of about 30 to 50.

44. The filtering face mask of claim 33, wherein the flexible flap has a generally uniform thickness of about 0.2 to 0.8 millimeters.

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45. The filtering face mask of claim 44, wherein the flexible flap has a generally uniform thickness of about 0.3 to 0.6 millimeters.

46. The filtering face mask of claim 45, wherein the flexible flap has a generally uniform thickness of about 0.35 to 0.45 millimeters.

47. The filtering face mask of claim 33, wherein the one free portion of the flexible flap has a profile that comprises a curve when viewed from the front, which curve is cut to correspond to the general shape of the seal surface.

48. The filtering face mask of claim 47, wherein the flexible flap is greater than one centimeter wide.

49. The filtering face mask of claim 48, wherein the flexible flap is 1.2 to 3 centimeters wide and is about 1 to 4 centimeters long.

50. The filtering face mask of claim 33, wherein the stationary portion of the flexible flap includes about 10 to 25 percent of the total circumferential edge of the flexible flap, with the remaining 75 to 90 percent being free to be lifted from the seal surface.

51. The filtering face mask of claim 33, wherein the valve seat includes a flange that provides a surface onto which the exhalation valve can be secured to the mask body, and wherein the flange extends 360 degrees around the valve seat where the valve seat is mounted to the mask body.

52. The filtering face mask of claim 33, wherein the flexible flap is positioned on the valve such that exhaled air is deflected downward during an exhalation when the filtering face mask is worn on a person.

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53. The filtering face mask of claim 33, wherein the mask body is cup-shaped and comprises (1) at least one shaping layer for providing structure to the mask, and (2) a filtration layer, the at least one shaping layer being located outside of the filtration layer on the mask body.

54. The filtering face mask of claim 33, wherein a high percentage of the exhaled air is purged through the exhalation valve.

55. The filtering face mask of claim 33, wherein at least 60 percent of the total airflow flows through the exhalation valve under a normal exhalation test.

56. The filtering face mask of claim 55, wherein at least 73 percent of the total airflow flows through the exhalation valve under a normal exhalation test.

58. The filtering face mask of claim 33, wherein the exhalation valve is positioned on the mask body substantially opposite to a wearer's mouth, and wherein the flexible flap is mounted to the valve seat in cantilever fashion.

60. The filtering face mask of claim 33, wherein the shape of the orifice does not wholly correspond to the shape of the seal surface.

61. The filtering face mask of claim 33, wherein the valve cover has an opening that is disposed directly in the path of fluid flow when the free portion of the flexible flap is lifted from the seal surface during an exhalation.

62. The filtering face mask of claim 61, wherein the opening in the valve cover is approximately parallel to the path traced by the second end of the flexible flap during its opening and closing.

63. The filtering face mask of claim 62, wherein the valve cover and its opening direct exhaled fluid flow downwards when the mask is worn on a person.

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64. The filtering face mask of claim 63, wherein the valve cover has fluid-impermeable sidewalls.

65. The filtering face mask of claim 63, wherein the opening in the valve cover is at least the size of the orifice in the valve seat.

66. A filtering face mask that comprises:

(a) a mask body that is adapted to fit over the nose and mouth of a wearer; and
(b) an exhalation valve that is attached to the mask body, the exhalation valve comprising:

(1) a valve seat that comprises:

- (i) a seal surface;
- (ii) an orifice that is surrounded by the seal surface; and
- (iii) a flap-retaining surface; and

(2) a single flexible flap that has a stationary portion and only one free portion and a peripheral edge that includes a stationary segment and a free segment, the stationary segment of the peripheral edge being associated with the stationary portion of the flap so as to remain at rest during an exhalation, and the free segment being associated with the one free portion of the flexible flap so as to be lifted away from the seal surface during an exhalation, the free segment also being located below the stationary segment when the filtering face mask is worn on a person and viewed from the front, the flexible flap being positioned on the valve seat such that the flap is pressed towards the seal surface in an abutting relationship therewith when a fluid is not passing through the orifice; and

(3) a valve cover that is disposed over the valve seat and that comprises a surface that mechanically holds the flexible flap against the flap-retaining surface.

67. The filtering face mask of claim 66, wherein the valve cover is secured to the valve seat by a friction fit to a wall of the valve seat.